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AMSAT News Service *ANS-151*
May 31, 2026

In this edition:

* AMSAT Opens Candidate Nominations for 2026 Board of Directors Election
* 2026 AMSAT Space Symposium & Annual General Meeting
* AMSAT Field Day 2026
* RADIANT Project Aims to Bring Delay-Tolerant Networking to Amateur Radio
* SpaceX Starship V3’s First Test Flight Largely Successful
* China Launches Shenzhou 23 Spacecraft
* Changes to AMSAT-NA TLE Distribution
* Blue Origin Explosion
* ARISS News
* AMSAT Ambassador Activities
* Satellite Shorts From All Over

The AMSAT® News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on https://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

AMSAT Opens Candidate Nominations for 2026 Board of Directors Election

AMSAT has officially opened the nomination period for its 2026 Board of Directors election, which will take place during the third quarter of the year.

Three director positions are set to expire in 2026. The current board members whose seats are up for election are:

- *Mark Hammond, N8MH*
- *Bruce Paige, KK5DO*
- *Paul Stoetzer, N8HM*

In addition to these three full Director roles, up to two Alternate Directors may also be elected to serve one-year terms.

To nominate a candidate, a written submission is required. Nominations must include the nominee’s name, call sign, and contact information, along with the same details for either five AMSAT members in good standing or one Member Society endorsing the candidate.

Nominations should be directed to the AMSAT Secretary:

Douglas Tabor, N6UA

1133 Verlan Way
Cheyenne, WY 82009

Per AMSAT's bylaws, all nominations must follow the format specified by the Secretary. Doug Tabor has indicated that nominations will be accepted in both hard copy (via postal mail) and digital formats (including email or scanned documents). However, fax submissions are not permitted.

Email nominations should be sent to: *dtabor [at] amsat [dot] org*

All nomination petitions must be received by the Secretary no later than June 15. After the submission deadline, the Secretary will confirm the eligibility of each candidate and the supporting members or societies, with final notification to candidates provided by the end of June.

[ANS thanks Doug Tabor, N6UA <https://x.com/dtabor>, AMSAT Secretary, for the above information.]

Buying from Ham Radio Outlet? Add AMSAT's *Getting Started With Amateur Satellites* to your order.
<https://www.hamradio.com/detail.cfm?pid=H0-019238> Available for $29.95 from HRO https://www.hamradio.com/detail.cfm?pid=H0-019238

2026 AMSAT Space Symposium & Annual General Meeting

The 44th AMSAT Space Symposium & Annual General Meeting will be held in Jacksonville, FL on October 8-11, 2026 at the Crowne Plaza Jacksonville Airport/I-95.

Registration details and Call for Papers will be coming soon.

To book hotel rooms online, click here: AMSAT Conference Rooms
<https://www.ihg.com/redirect?path=asearch&brandCode=6C&localeCode=en&regionCode=1&hotelCode=JAXAP&checkInDate=07&checkInMonthYear=092026&checkOutDate=11&checkOutMonthYear=092026&rateCode=6CBARC&_PMID=99801505&GPC=AMS&cn=no&adjustMonth=false&showApp=true&monthIndex=00>

Reservations can also be made by phone at 1-800-227-6963. The group code is AMS. The direct hotel phone number is 1-904-741-4404.

[ANS thanks AMSAT for the above information.]

AMSAT Field Day 2026

It's that time of year again; summer and Field Day! Each year the American Radio Relay League (ARRL) sponsors Field Day as a "picnic, a campout, practice for emergencies, an informal contest and, most of all, FUN!" The event takes place during a 27-hour period on the fourth weekend of June. For 2026 the event takes place from 1800 UTC on Saturday June 27, 2026 through 2100 UTC on Sunday June 28, 2026. Those who set up prior to 1800 UTC on June 27 can operate only 24 hours. The Radio Amateur Satellite Corporation (AMSAT) promotes its own version of Field Day for operation via the amateur satellites, held concurrently with the ARRL event.

This year should be as much fun as last year since we have more than 10 transponders and repeaters available. Users should check the AMSAT status page at http://www.amsat.org/status/ and the pages at https://www.amsat.org/two-way-satellites/ for what is available in the weeks leading up to field day. To reduce the amount of time to research each satellite, see the current FM satellite table at https://www.amsat.org/fm-satellite-frequency-summary/ and the current linear satellite table at https://www.amsat.org/linear-satellite-frequency-summary/

If you are considering ONLY the FM voice satellites, there are ISS, SO-50,

AO-123, SO-125, and SONATE-2. It might be easier this year to make that one FM contact for the ARRL bonus points with so many FM birds. The congestion on FM LEO satellites is always so intense that we must continue to limit their use to one-QSO-per-FM-satellite. This includes the International Space Station. You will be allowed one QSO if the ISS is operating Voice.

It was suggested during past field days that a control station be allowed to coordinate contacts on the FM satellites. There is nothing in the rules that would prohibit this. This is nothing more than a single station working multiple QSO’s. If a station were to act as a control station and give QSO’s to every other field day station, the control station would still only be allowed to turn in one QSO per FM satellite while the other station would be able to submit one QSO.

The format for the message exchange on the ISS or other digital packet satellite is an unproto packet to the other station (3-way exchange required) with all the same information as normally exchanged for ARRL Field Day, e.g.:

W6NWG de KK5DO 2A STX
KK5DO de W6NWG QSL 5A SDG
W6NWG de KK5DO QSL

If you have worked the satellites on Field Day in recent years, you may have noticed a lot of good contacts can be made on some of the less-populated, low-earth-orbit satellites like AO-7, RS-44, AO-73, and JO-97. During Field Day the transponders come alive like 20 meters on a weekend. The good news is that the transponders on these satellites will support multiple simultaneous contacts. The bad news is that you can’t use FM, just low duty-cycle modes like SSB and CW.

The complete rules for AMSAT Field Day may be found at: https://www.amsat.org/field-day/.

[ANS thanks Bruce Paige, KK5DO, AMSAT Director Contests and Awards, for the above information.]

RADIANT Project Aims to Bring Delay-Tolerant Networking to Amateur Radio

RADIANT, short for Radio Amateur Delay-tolerant Interplanetary Networking Testbed, is an open-source project seeking to bring NASA-inspired Delay-Tolerant Networking (DTN) concepts to amateur radio. The effort aims to create communication systems capable of handling intermittent, disrupted, or long-delay links ranging from terrestrial amateur radio networks to future cislunar communication systems. Project developers describe RADIANT as a stepping stone toward Earth-Moon networking experiments using technologies and operating practices accessible to the amateur radio community. The initiative is supported by AMSAT-UK, AMSAT-DL, and Goonhilly Earth Station, and is actively seeking collaborators.

The project is built around NASA Glenn Research Center’s High-rate Delay Tolerant Networking software, known as HDTN, which implements Bundle Protocol version 7 (BPv7). Rather than assuming a continuous network path between endpoints, DTN stores and forwards data bundles whenever communication opportunities become available. This approach allows communication systems to survive outages, long propagation delays, and interruptions that would break conventional internet-style connections. Project developers say these networking methods are essential for future deep-space operations where connectivity may be intermittent or unpredictable.

RADIANT incorporates amateur radio techniques directly into its design. The protocol stack uses Licklider Transmission Protocol carried over KISS framing and conventional amateur radio hardware operating at 9600 baud G3RUH packet speeds. Callsigns are embedded into DTN Endpoint Identifiers to preserve amateur radio regulatory compliance while allowing efficient network routing. Current demonstrations include store-and-forward operation, systems designed for persistent storage through power interruptions, priority handling of traffic, and telemetry monitoring through HDTN interfaces.

RADIANT project infographic illustrates DTN networking concepts from terrestrial amateur radio links to future cislunar communications. [Credit: RADIANT]

Among the project’s early accomplishments is a functioning three-node cislunar simulation capable of introducing realistic packet propagation delays. Developers report demonstrations simulating Earth–Moon delays of approximately 1.3 seconds and Earth–Mars delays ranging from three to twelve minutes. Contact Graph Routing is used to calculate communication paths through relay nodes, demonstrating multi-hop relay in simulation similar to what future space networking architectures may require. The project deliberately avoids encryption and cryptographic methods to maintain compatibility with amateur radio regulations.

Development is planned in phases beginning with terrestrial validation using readily available amateur radio equipment. Phase 1 testing currently uses Raspberry Pi systems, Mobilinkd TNC4 hardware, and Yaesu FT-817 radios to validate networking functions across ground-based links. Future plans include demonstrations through the QO-100 geostationary satellite, a CubeSat engineering model, and eventually an orbital Low Earth Orbit payload operating on amateur frequencies. Longer-term ambitions include experiments supporting amateur participation in cislunar communications, the region of space between Earth and the Moon.

Project organizers emphasize that amateur operators possess unique experience relevant to difficult communications environments, including weak-signal work, scheduled links, and operation over challenging propagation paths. RADIANT developers are seeking participation from amateur radio clubs, universities, CubeSat teams, microwave experimenters, and packet radio operators interested in contributing to future testing and development. Users registering through the project website can also access additional information and requirements associated with each development phase. Additional information and project details are available on the RADIANT website at https://radiant.amsat-uk.org/.

[ANS thanks Dave Johnson, G4DPZ, AMSAT-UK Hon. Secretary, and the RADIANT project for the above information.]

The 2026 Coins Are Here! Help Support GOLF-TEE and Fox-Plus.
Annual memberships start at only $120.

[image: Presidents' Club 2026 Coin]
<https://www.amsat.org/join-the-amsat-presidents-club/>

Join the AMSAT President’s Club today and help Keep Amateur Radio in Space! https://www.amsat.org/join-the-amsat-presidents-club/ <https://www.amsat.org/join-the-amsat-presidents-club/>

SpaceX Starship V3’s First Test Flight Largely Successful

SpaceX has flown Starship V3 for the first time, in a test flight that met most of its goals. The company had to step down from a launch attempt on

the evening of May 21, due to a technical issue. Specifically, a hydraulic pin holding the spacecraft's tower arm in place would not retract. But on May 22, nothing prevented SpaceX from launching the upgraded version of its spacecraft designed for journeys to the moon and Mars.

SpaceX Starship V3 Launch (Credit: SpaceX)

The launch vehicle ignited all 33 of its Super Heavy booster's new Raptor 3 engines and then lifted off at 22:30 UTC from Starbase, Texas. During ascent, one of the booster's engines shut down, but Starship continued its flight until it was time for the stages to separate. The booster was able to perform a directional flip maneuver, which the company wanted to test for future missions. However, it was unable to light all the engines needed to perform a successful boostback burn, the other maneuver necessary for the rocket to be able to travel back towards its landing site. It wasn't a loss, however: SpaceX had been catching Super Heavy boosters with its launch tower's mechanical arms in previous flights, but it never intended to recover this one.

Despite the engine failures, SpaceX chief Elon Musk congratulated his team "on an epic first Starship V3 launch and landing," telling them they "scored a goal for humanity." SpaceX managed to pull a largely successful test flight, just in time for its Initial Public Offering (IPO). The company just publicly filed its IPO paperwork with the Securities and Exchange Commission, and Reuters has reported that SpaceX shares are expected to start trading on June 12.

[ANS thanks Engadget for the above information. Read the full article at: https://www.engadget.com/2180020/spacex-starship-v3-first-test-flight-success/ <https://www.engadget.com/2180020/spacex-starship-v3-first-test-flight-success/>]

[image: SDR Gen 2 Ad - 2026]

China Launches Shenzhou 23 Spacecraft

China launched the Shenzhou 23 spacecraft on May 24 with three astronauts heading to its space station, including one set to stay in space for a year. The spacecraft blasted off from the Jiuquan Satellite Launch Center in northwestern China. The much-anticipated launch comes as China prepares for its first crewed lunar landing by 2030.

The Shenzhou-23 manned mission launches from the Jiuquan Satellite Launch Center in Jiuquan, northwestern China on Sunday, May 24, 2026. (Credit: Xinhua/Lian Zhen)

The astronauts on the mission are Zhu Yangzhu, the commander, Zhang Zhiyuan and Lai Ka-ying, also identified by Chinese authorities as Li Jiaying using the Mandarin transliteration of her name. Lai, who was born and raised in Hong Kong and has a doctoral degree in computer forensics, is the first astronaut from the city on a space mission.

One of the three astronauts on the Shenzhou 23 mission is scheduled to stay at the orbiting space station for a year in what would be among the world's longest single stays in space. The astronaut's mission is to "explore human adaptability and performance limits" in long-duration spaceflight environments, state media reported.

*[ANS thanks NPR News and the Associated Press for the above information. Read the full article at: https://www.npr.org/2026/05/25/g-s1-124179/china-launches-shenzhou-23-spacecraft?utm_campaign=npr&utm_s

ource=bsky.app&utm_medium=social&utm_term=nprnews
<https://www.npr.org/2026/05/25/g-s1-124179/china-launches-shenzhou-23-spacecraft?utm_campaign=npr&utm_source=bsky.app&utm_medium=social&utm_term=nprnews>]*

AMSAT Remove Before Flight Key Tags Now Available
Yes, These are the Real Thing!
* <https://www.zazzle.com/amsat_car_flag-256716714380264543>*

Your $20 Donation Goes to Help Fly a Fox-Plus Satellite Includes First Class Postage (Sorry – U.S. Addresses Only) Order Today at https://www.amsat.org/product/amsat-remove-before-flight-keychain <https://www.amsat.org/product/amsat-remove-before-flight-keychain/>

Changes to AMSAT TLE Distribution for May 29, 2026

Two Line Elements or TLEs, often referred to as Keplerian elements or keps in the amateur community, are the inputs to the SGP4 standard mathematical model of spacecraft orbits used by most amateur tracking programs. Weekly updates are completely adequate for most amateur satellites. TLE bulletin files are updated daily in the first hour of the UTC day. New bulletin files will be posted immediately after reliable elements become available for new amateur satellites. More information may be found at https://www.amsat.org/keplerian-elements-resources/ <https://www.amsat.org/keplerian-elements-resources/>.

The following satellites have been removed from this week's AMSAT TLE distribution:

- SilverSat NORAD Cat ID 66909 Decayed from orbit on or about 23 April 2026
- HYDRA-W NORAD Cat ID 63490 Decayed from orbit on or about 24 April 2026
- HADES-ICM (SO-125) 63492 Decayed from orbit on or about 22 May 2026

General Perturbations Data Support

AMSAT is pleased to announce that modern forms of what are called General Perturbations data are being disseminated via modern formats including JSON, XML and KVN at https://newark192.amsat.org/gpdata/current/. The reason this change is being made is that we are running out of 5-digit catalog numbers and the TLE format is not viable for satellites launched after July of this year. See https://celestrak.org/NORAD/documentation/gp-data-formats.php for details.

These data are presently considered in beta test for the next two months while hosted on the test server newark192.amsat.org, and we are very open to community feedback at webmaster(a)amsat.org. Testers may experience outages and errors while we make improvements. We intend to put this into production on our main web server in July as we expect that satellites launched after this summer will require one of the new formats to accommodate longer object numbers. AMSAT will continue to publish TLE bulletins for satellites launched before July 2026 indefinitely.

[ANS thanks Joe Fitzgerald, KM1P, AMSAT Orbital Elements Manager, for the above information.]

Blue Origin Explosion

A Blue Origin New Glenn rocket blew up on the launch pad in Cape Canaveral, Fla., on Thursday night, May 28, during an engine-firing test ahead of a satellite launch next week.

Jeff Bezos, the founder of Blue Origin and Amazon.com, at Blue Origin's West Texas launch site. (Photo: Blue Origin)

No one was hurt. The explosion shook nearby homes and briefly painted the sky orange.

Jeff Bezos, Blue Origin’s founder, wrote on X: “It’s too early to know the root cause but we’re already working to find it. Very rough day, but we’ll rebuild whatever needs rebuilding and get back to flying. It’s worth it.”

[ANS thanks Axios for the above information.]

ARISS News

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.
Scheduled Contacts

+ Recently Completed

Minamigaoka Elementary School, Tsu, Japan, direct via JJ2YJC
The ISS callsign was presently scheduled to be OR4ISS
The scheduled crewmember is Jack Hathaway KJ5NIV
The ARISS mentor is JE1MUI/JA1CJP/MØXTD
Contact was successful: Thu 2026-05-28 11:23:58 UTC 29 degrees maximum elevation
Congratulations to the Minamigaoka Elementary School students, Jack, mentors JE1MUI, JA1CJP, and MØXTD, and ground station JJ2YJC!

+ Upcoming Contacts

Ecole Henri Clément, Saint-Rémy, France, direct via F6KMF joint contact with Collège Jorge Semprun, Gueugnon, France direct via F6KJS
The ISS callsign is presently scheduled to be OR4ISS
The scheduled crewmember is Sophie Adenot KJ5LTN
The ARISS mentor is F6ICS
Contact is go for: Fri 2026-06-05 09:26:47 UTC 34 degrees maximum elevation

Many times, a school makes a last-minute decision to do a Livestream or runs into a last-minute glitch requiring a change of the URL, but we at ARISS may not get the URL in time for publication. You can always check https://live.ariss.org/ to see if a school is Livestreaming.

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

The crossband repeater remains configured in the Columbus Module (145.990 MHz up {PL 67} & 437.800 MHz down). If a crewmember decides to pick up the microphone and turn up the volume, you may hear them on the air—so keep listening, as you never know when activity might occur.

Kenwood D710GA in the Zvezda Service Module – Call sign RSØISS. Please note we’re still in the process of troubleshooting and testing this radio. APRS is currently active on 437.825 MHz. Feel free to check out status reports at https://ariss-usa.org/ARISS_APRS/.

Ham TV is currently transmitting a test signal at 2395.00 MHz.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at
https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information.]

AMSAT Ambassador Activities

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.
Scheduled Events

44th AMSAT Space Symposium and Annual Membership Meeting – October 8 thru 11, 2026
Crowne Plaza JAX Airport
14670 Duval Road
Jacksonville, FL 32218

For more information go to: https://www.amsat.org/ambassador/

[ANS thanks Bo Lowrey, W4FCL, Director – AMSAT Ambassador Program, for the above information.]

Satellite Shorts from All Over

+ NASA confirmed on May 21 that the Russian segment of the International Space Station has begun leaking atmosphere into space again. It's an old problem that NASA recently hoped was resolved. In January, NASA said that after multiple inspections and sealant applications, the pressure inside this segment, known as the PrK module, had reached a "stable configuration." The PrK module is essentially a transfer tunnel attached to the Zvezda Service Module on the Russian segment of the space station. Unfortunately, the leak returned three weeks ago after Russian cosmonauts unloaded cargo from the Progress 95 cargo spacecraft. Although there is no impact on astronauts aboard the station, nor any immediate concerns about the station's health, the returning leak issue raises new questions about the long-term viability of the ISS.* (ANS thanks Ars Technica for the above information. See the full article at:
https://arstechnica.com/space/2026/05/uh-oh-the-international-space-station-is-leaking-again/
<https://arstechnica.com/space/2026/05/uh-oh-the-international-space-station-is-leaking-again/>)*

+ NASA has released the images Psyche space probe took when it did a Mars flyby to get a gravity assist from the red planet on its way to the metallic asteroid 16 Psyche. The photos are available at the main mission site: https://solarsystem.nasa.gov/psyche-raw-images/. After getting gravity assist from Mars, Psyche will resume using its solar-electric propulsion system to continue its journey. The spacecraft started its six-year trip to its namesake asteroid back in October 2023. During the flyby, it got closer to Mars than the planet's own moons and passed within 2,800 miles of its surface at its closest approach. The spacecraft is expected to reach its destination in 2029, after which it will spend two years orbiting and observing the asteroid. 16 Psyche is the largest known metallic asteroid in our solar system, and scientists believe data from observing it could give us insight about the formation of our own planet's core.* (ANS thanks Engadget and NASA for the above information. Read More:
https://www.engadget.com/2180093/nasa-shares-psyche-spacecraft-photos-of-mars/
<https://www.engadget.com/2180093/nasa-shares-psyche-spacecraft-photos-of-mars/>.)*

+ New satellite tracking software by Japan's Rymansat Group is available at https://t.co/sIYzK22XQE. *(ANS thanks Yutaka Murata, JA1COU, for the above information.)*

+ Don Friend, WA4MCM, has begun selling a light-duty satellite antenna

rotor kit for Arrow or Elk antennas that is designed to be mounted on a standard camera tripod with 1/4-20 mounting bolt. Information at https://wa4mcmkits.com/psr-100/. *(ANS thanks Don Friend, WA4MCM, for the above information.)*

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

- Societies (a recognized group, clubs or organization).
- Students enrolled in at least half-time status are eligible for free membership to age 25.
- Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week’s ANS Editor,

Mark Johns, KØJM
mjohns [at] amsat.org <http://amsat.org>

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